

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for of-screening a subject for disorders of glucose metabolism, comprising steps of:

5 measuring a glucose concentration profile, said glucose concentration profile comprising a plurality of blood glucose concentrations from at least after a glucose or meal challenge;

generating a screening factor, wherein said screening factor comprises a mathematical representation of at least a plurality of glucose concentrations

10 within said glucose concentration profile, wherein said screening factor is uniquely associated with a state of glucose metabolism disorder, wherein said state of glucose metabolism disorder comprises any of:

diabetic,

pre-diabetic;

15 normal; and

hyperinsulinemic;

using at least a portion of said plurality of blood glucose values, evaluating a shape of said profile according to at least one parameter of said profile; and

20 classifying the said subject into at least one of said states of glucose metabolism disorder predetermined class based on evaluation of said shape screening factor.

2. (Currently Amended) The method of Claim 1, wherein said plurality of blood glucose concentrations values comprises a time series.

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3. (Currently Amended) The method of Claim 1, wherein said blood glucose concentrations values comprise are actual values.

4. (Currently Amended) The method of Claim 1, wherein said blood glucose concentrations values- comprise are relative values.

5. (Currently Amended) The method of Claim 1, wherein said screening factor is generated using a parameter, wherein said parameters includes any of:

initial fasting glucose concentration;

maximum glucose concentration;

glucose concentration after elapse of a predetermined time interval;

area under the curve of the glucose profile; and

10 area under the curve of the glucose profile over a defined period of time.

6. (Currently Amended) The method of Claim 5, wherein said classifying evaluating-step comprises:

15 comparing any-of said screening factor parameters-with a corresponding predetermined values and/or a ranges of values indicative of either a normal condition or one of a plurality of abnormal conditions.

7. (Cancelled)

20 8. (Currently Amended) The method of Claim 1, wherein said generating evaluation-step comprises:

determining a weight for each of a set of said-parameters.

25 9. (Currently Amended) The method of Claim 8, wherein said step of determining a weight comprises assigning each of said set of parameters a value on either a linear or non-linear scale,-according-to-value-of-said-parameter,-said assigned value comprising said weight.

10. (Original) The method of Claim 9, wherein minimum and maximum of said scale correspond to predetermined threshold values for a normal condition and a diabetic condition, respectively.

5 11. (Original) The method of Claim 9, wherein minimum and maximum of said scale correspond to predetermined threshold values for a low glucose tolerance and a normal condition, respectively.

10 12. (Currently Amended) The method of Claim 9, wherein maximum of said scale corresponds to predetermined threshold values for a diabetic condition.

13. (Original) The method of Claim 9, wherein ranges of values represented by said scale are established according to standard diagnostic criteria.

15 14. (Original) The method of Claim 9, wherein missing parameters are assigned a weight of zero.

15. (Original) The method of Claim 9, wherein missing data are supplied from historical data.

20 16. (Currently Amended) The method of Claim 19, wherein said further comprising a step of generating calculating one or more a screening factors uses based-on actual or relative values for of said parameters and said weights.

25 17. (Currently Amended) The method of Claim 16, wherein said step of generating a calculating-screening factors comprises the step of calculating a weighted average of said-weighted parameters according to:

$$SF = \frac{(P_1W_1 + P_2W_2 + P_3W_3 + P_4W_4 + P_5W_5 + P_6W_6)}{(W_1 + W_2 + W_3 + W_4 + W_5 + W_6)},$$

wherein SF = said screening factor SF is said screening factor, P₁ is a first parameter, said first parameter comprising glucose concentration, P₂ is a second parameter, said second parameter comprising rate at which glucose 5 concentration rises, P₃ is a third parameter, said third parameter comprising maximum monitored glucose concentration; P₄ is a fourth parameter, said fourth parameter comprising duration that glucose remains elevated; P₅ is a fifth parameter, said fifth parameter comprising rate of decrease of glucose concentration after a peak; and P₆ is a sixth parameter, said sixth parameter comprising minimum glucose concentration after a maximum; and wherein W₁, 10 W₂, W₃, W₄, W₅, W₆, are weighting factors, wherein at least two of said weighting factors are non-zero.

18. (Cancelled)

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19. (Cancelled)

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20. (Cancelled)

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21. (Currently Amended) The method of Claim 16, further comprising a step of establishing threshold screening limits based on said screening factors.

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22. (Currently Amended) The method of Claim 1, wherein said mathematical representation is generated using parameters include any of:

an initial fasting glucose concentration;

a rate of increase of glucose concentration following said glucose challenge;

a peak monitored glucose concentration;

a duration glucose remains elevated;

a rate of decrease of glucose concentration following said peak concentration;

a minimum glucose concentration following said peak concentration;

5 an area under the curve for the glucose profile; and

an area under the curve during a subset in time of the glucose profile.

23. (Currently Amended) The method of Claim 1, further comprising the step of advising the said-subject of screening results.

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24. (Currently Amended) The method of Claim 1, further comprising the step of advising the said-subject of health risks from complications likely to result from subject's condition.

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25. (Currently Amended) The method of Claim 1, wherein said blood glucose concentrations values-are obtained using any of:

a noninvasive blood glucose analyzer;

a minimally invasive blood glucose analyzer; and

an invasive blood glucose analyzer.

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26. (Original) The method of Claim 1, wherein a processing device so programmed executes said steps.

27. (Cancelled)

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28. (New) The method of Claim 1, wherein said blood glucose concentrations are obtained using a noninvasive blood glucose analyzer.

29. (New) The method of Claim 1, wherein said screening factor comprises a numerical value.

30. (New) The method of Claim 1, wherein said screening factor comprises
5 representation of a shape of said glucose concentration profile.

31. (New) The method of Claim 1, wherein said screening factor comprises an abstract representation of said glucose concentration profile.

10 32. (New) The method of Claim 1, wherein said screening factor comprises the result of an unsupervised classification.

33. (New) The method of Claim 1, wherein said screening factor comprises the result of a supervised classification.

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